

**Measure:** City of Tucson Telework Program (T2)

Design and adopt an expanded telework program for City employees that extends to 20% of the workforce and delivers fuel and cost savings, reduces emissions, and restores worker productivity lost to commuting while at the same time achieving City Department missions.

Emission reduction potential in 2020:	706 tCO <sub>2</sub> e/yr.
Percentage of goal (2012):	0.04%
Percentage of goal (2020):	0.03%
Total annual average implementation costs:	\$0
Entity that bears the costs of implementation:	City of Tucson
Cost/Savings per tCO <sub>2</sub> e:	Savings \$437/tCO <sub>2</sub> e
Net annual savings:	\$309,000
Entity that realizes the financial return:	City of Tucson employees
Equitability (progressive/regressive, income/revenue neutral, etc):	Neutral
Potential unintended consequences:	Less productivity

## **Background information:**

Telework refers to work performed outside of a traditional on-site work environment. Programs usually consist of work arrangements between employers and employees in which an employee regularly performs officially assigned duties at home or another place of convenience.

These can include working from a telework center, home office, or the conduct of a business virtually via the internet as well as simple flexible work schedules to avoid traffic congestions during peak commuting hours.

Telework programs have benefits of reducing vehicle miles traveled as well as associated emissions, time lost in commutes, and cost savings due to reduced fuel purchases.<sup>1</sup>

## **Status Quo / Business as Usual:**

In the absence of an aggressive and expanded telework program, employees of the City of Tucson may miss opportunities to achieve energy and cost savings owing to telework benefits. In addition, the City may likely miss opportunities of its own to achieve increased workforce productivity that most often accompanies episodic teleworking of its workforce.

## **Description of Measure and Implementation Scenario:**

The City of Tucson will design and adopt an expanded telework program for City employees that engages 20% of its telework-eligible workforce (estimated at 25% of the total workforce of ~5,300) to telecommute at least one day a week and pursue the necessary management steps to implement this policy. Full implementation occurs in year one of the program.

## **Has the Measure been implemented elsewhere and with what results:**

The measure has been implemented across the United States, in government, academia, and the private sector.<sup>2</sup> Examples of positive energy savings, greenhouse gas reduction, and other benefits are attached to each program.

In one particular program, the U.S. General Services Administration<sup>3</sup> quantified the savings from engaging its HQ workforce (12,205), 85% of which were eligible for telework, at a participation rate (50%) in telework of one day per week. Telework trip-miles saved came to 4,735,146 single occupancy vehicle miles and fuel (gasoline) saved of 220,239 gallons. Using 2007 fuel costs at the time, the fuel savings amounted to almost \$616,000.

In a more comprehensive evaluation of the public and private sector telework practice, the American Enterprise Institute (AEI) reports that per year, the average teleworker uses 339 fewer gallons of gas and saves \$1,018 in commuting costs (based on \$3.00/gallon gasoline national average).<sup>4</sup>

### **Energy/Emission analysis:**

Taking the national average of 340 gallons of gasoline saved per year and lowering it to account for the reduced average commute time for Tucson workers<sup>5</sup>, there will still be a projected savings of 300 gallons/telework employee/year.

There will also be energy savings to the City in the form of reduced operating costs in buildings less frequently occupied. At some point additional consolidation of office space may be possible creating permanent cost savings, some of it from lower energy expenses. These savings are not easily quantified at this time.

Assuming 25% of City employees are telework-eligible, and 20% of those are engaged in a telework program, the total number of staff initially teleworking one-day a week would be 265. Annual fuel savings generated by this number of teleworkers over one year would be 79,500 gallons.

Greenhouse gas savings from 265 employees of the City teleworking one day of week for one year equates to: 706 tons.

### **Climate Change Impact Summary in tCO<sub>2</sub>e:**

COT 1990 Citywide GHG emissions (baseline):	5,461,020
MCPA 7% reduction target for COT:	5,078,749
2012 BAU GHG emissions projection:	7,000,000
2020 BAU GHG emissions projection:	7,343,141
GHG emissions reduction to meet 7% goal (2012):	1,921,251
GHG emissions reduction to meet 7% goal (2020):	2,264,392
Contribution of this Measure each year:	706

## **Economic analysis:**

The cost of administering a telework program for the City may would likely be negligible and should not be expected to exceed the savings form reduced building energy use and other savings especially should workplace consolidation and other facility savings be possible.

Using the Westmoreland Associates Tucson vehicle fuel price projections, and the existing mix of vehicle fuels as 93% gasoline and 7% diesel, the annual savings are projected to average ~\$309,000. Total savings to 2020 is ~\$3.1 million.

The dollar savings per tCO<sub>2</sub>e saved through 2020 is \$437.

The projected economic impact using the 1.5 multiplier is ~\$4.63 million.

## **Co-benefits:**

The General Services Administration<sup>6</sup> and the AEI<sup>7</sup> have each catalogued a range of co-benefits that accrue from telework. These include:

- Improved employee job performance
- Reduced absenteeism
- Maintain COOP in the face of emergency disruptions
- Improved moral and employee retention
- More accommodating to persons with disabilities
- Reduced demand for office space and facility operating costs, and
- Optimal use of technological advances

As the City demonstrates through this expanded telework program that multiple benefits accrue to itself and its workforce it may well become a model for private and non-profit sector (Raytheon, Davis-Monthan AFB, University of Arizona, etc.) telework initiatives with much larger cost savings, energy and emissions reductions potential may be implemented, further reducing Tucson congestion.

## **Equitability:**

Due to the inability of certain job tasks being performed outside of the conventional work environment, not all job classifications may be determined eligible for telework. This may result in employee dissatisfaction issues if not addressed in some other manner to offset benefits of telework not available to all.

## **Potential unintended consequences:**

There will always remain for the potential of a program such as telework to be abused by employees no longer in a traditional workplace setting with traditional workplace

supervisory and peer relationships available. Also, some workers may not function well in a telework situation and may self-select out of the opportunity to participate in such a program. Finally, there may be the perception that workers in a telework mode are abusing it. This will need to be addressed at the outset of any program via clear changes in management approaches, accountability expectations, and communications both across and outside the organization.

## **Endnotes**

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<sup>1</sup> <http://www.teleworkexchange.com/teleworker-09-10h.asp>

<sup>2</sup> Johnson, M., General Services Administration, "Telework boosts productivity, decreases carbon footprint," The Federal Times, 2010, at: <http://www.federaltimes.com/article/20101031/ADOP06/10310307/>

<sup>3</sup> U.S. General Services Administration and the Telework Exchange. "The Benefits of Telework." 2008. <http://www.teleworkexchange.com/pdfs/The-Benefits-of-Telework.pdf>

<sup>4</sup> Green, K.P.; Should the Government Expand Telework? 2010. American Enterprise Institute for Public Policy Research. No 2. <http://www.aei.org/docLib/EEO-2010-8-No-2-g.pdf>

<sup>5</sup> City-data.com. Tucson, AZ Houses and Residents. <http://www.city-data.com/housing/houses-Tucson-Arizona.html>

<sup>6</sup> U.S. GSA, op cit.

<sup>7</sup> Green, op cit.